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(3) The difference in spectral class between the components of double stars appears to be independent of their projected linear separation in astronomical units.

(4) From the meagre data available for the mass-ratio in a few binary systems (all dwarf stars), the difference in spectral class between the components shows a tendency to decrease as the ratio of the masses approaches unity.

FREDERICK C. LEONARD.

Lick Observatory, Mount Hamilton, Calif., July 2, 1921.

THE PHOTO-ELECTRIC PHOTOMETER OF THE LICK OBSERVATORY, AND SOME PRELIMINARY RESULTS OBTAINED WITH IT*

(Abstract)

The photometer was built partly in the Observatory shop at Mount Hamilton and partly in the shop of the Physics Department at Berkeley. The lantern slides exhibit the instrument in detail. It differs from other photometers of this class in numerous details. The most conspicuous difference is in the manner of cutting down the light incident on the cell. When two objects are to be compared one must be reduced until both are of about the same brightness. Other observers have done this by means of objective diaphragms or shade glasses at the focus. In the present instrument it is done by a sectored disk driven by a small motor.

Tests of the photometer were begun in the Physical Laboratory of the University of California and continued at the Lick Observatory. Much experimental work was necessary to put the instrument in good running order. The observing so far has included measures of the *Pleiades* to check the laboratory calibration; of stars of various spectral types to obtain the color-equation of the instrument; and of several variable stars.

EDITH E. CUMMINGS.

THE PHYSICAL MEMBERS OF THE PLEIADES GROUP*

(Abstract)

Two hundred and forty-four stars of the region of the *Pleiades* were found to have proper-motions differing less than $2''.0$ per century from the mean motion of the group, and they have to be considered as physical members of the group. Their spectral types and colors show a definite relation to their photographic magnitudes. Between the limits $2^m.8$ to 11^m the range in spectral classes